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Patent
Case No.: 55525US011

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GROUP 1700

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: **DIVIGALPITIYA, RANJITH**

Application No.: **10/008,468** Group Art Unit: **1773**

Filed: **November 9, 2001** Examiner: **Hoa T. Le**

Title: **METHOD AND APPARATUS FOR MAKING PARTICLE-EMBEDDED WEBS**

AMENDMENT AND RESPONSE UNDER 37 CFR §1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION
To Fax No.: 703-872-9310
I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office on:

May 21, 2003 _____
Date

Signed by: Dean M. Harts

Dear Sir:

This is in response to the outstanding Office Action, mailed April 22, 2003, in the above-identified application.

This Amendment is believed to be timely submitted. It is believed that no fee is due; however, in the event a fee is required, please charge the fee to Deposit Account No. 13-3723.

AMENDMENTS

Please amend the application as follows:

In the Specification

On page 13, please replace the paragraph including lines 3-13 with:

This percentage of embedding can be increased to about 100%, as shown in Figure 1B, by further pre-heating the web 12, which results in further softening of the web 12. Since the tackiness of the web typically increases as the softness of the material increases, above a certain temperature the web can stick to the nip rollers 36 which may cause damage to the web 12. To overcome this limitation, a nip liner 37B can optionally be disposed over the heated web 12 between the nip roller 36 and the particle surface 12A of the web 12. The nip liner 37B allows the temperature of the web 12 to be increased up to a temperature where the polymer forming the web is more amenable to flow. The nip liner 37B prevents the material forming the web 12 from adhering to the nip rollers 36 while still allowing the particles to be fully embedded. After the nip rollers 36, the web 12 passes around a drive roller 38 (if the nip rollers 36 are not driven) and to a windup roller 40 at a windup station, such as with an air-clutched winder. Alternatively, the web 12 can optionally pass over a stainless steel pacer roll.

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Please replace the paragraph beginning on page 21 line 21 and ending on page 22 line 6 with:

One embodiment of the feedback loop 149 utilizes the optical extinction of a laser beam across the plume of dispensed particles as the monitoring device as illustrated schematically in Figure 10. The collimated line beam (~4" wide and about 2 mm thick) of the laser follows a path 150 from a source 152 to a detector 154 (e.g. a diode laser and a photodetector). The radiation (i.e., light) passes through a first Fresnel lens 156, and through both back and front particle plumes 159 (those due to both the screen/brush and brush/wire interactions). The forward scattered light is collected by a second Fresnel lens 158 and is measured with the detector (e.g. a photodetector). A calculation device 160 such as an electronic feedback circuit as described in The Art of Electronics (Horowitz and Hill. New York: Cambridge University Press, 2nd ed., 1989), or a PLC or computer can be utilized to calculate the rate of particle dispersement from the measured light intensity. The calculation device can then be used to regulate the rotational speed of the motor 64 by outputting a voltage that is proportional to the difference between a

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